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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,955	05/10/2006	Robert K. Evans	21575P	8652

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EXAMINER	
CHEN, STACY BROWN	
ART UNIT	PAPER NUMBER
1648	

MAIL DATE	DELIVERY MODE
12/19/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/578,955	EVANS ET AL.	
	Examiner	Art Unit	
	Stacy B. Chen	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/16/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The specification is objected to because the first paragraph must indicate that the instant application is a national stage filing of PCT/US04/38670, filed November 18, 2004. While the specification refers to the provisional application 60/523,479, there must also be a reference to the PCT application. Applicant may file an application data sheet that includes this information in lieu of amending the specification.

Claims Summary

2. The claims are directed to a live adenovirus formulation comprising chlorobutanol (CB) and various inhibitors of free radical oxidation, buffers, cryoprotectants, salts, divalent cations and non-ionic detergents. Also claimed is a vaccine vial comprising the formulation, and a method of preserving a live adenovirus formulation using CB.

Claim Objections

3. Claims 30 and 34 are objected to because there are two periods at the end of each sentence.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-20, 33, 35 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite, "multi-dose image" and "single dose image". It is not clear what the term "image" is meant to encompass. Lacking a definition in the

specification, the metes and bounds of the claims cannot be determined. For purposes of compact prosecution, the Office will interpret the term "image" as "vial". Clarification and/or correction are required. Note that the same terminology is used in the abstract.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 9 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Gao *et al.* (WO 01/40455 A2, "Gao"). The claims are summarized above. Gao discloses live, recombinant adenovirus vectors for pharmaceutical use comprising a preservative, such as chlorobutanol (see page 19, first paragraph). The adenovirus concentration taught by Gao is in the range of 1010 to 1018 for an adult human having a weight of about 80 Kg (see page 19, fourth paragraph). In view of Gao's teachings, the claimed subject matter is anticipated by the prior art.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 10-12, 19-22, 29, 30, 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gao *et al.* (WO 01/40455 A2, "Gao"), as applied to claims 1, 9 and 31 above. The claims are summarized above. Gao does not specifically teach that the formulation of live adenovirus contains CB in the amount of a lowest effective concentration of CB up to the solubility limit of CB for the formulation. However, Gao teaches that CB is used as a preservative in a live, recombinant adenovirus composition for administration. It would have been obvious to one of ordinary skill in the art and well within the ability of that individual to use an amount of CB that is effective for the purpose of preservation without exceeding the solubility limit for the formulation.

Gao does not specifically teach the use of a multi-dose or single dose vial, however it would have been obvious to use a vial to store the contents of the formulation in order to contain and protect the formulation for delivery, storage and subsequent use. Gao discloses that the formulation of live, recombinant adenovirus can be administered using any suitable route, such as intravenous, intramuscular, etc. (see page 19, second paragraph). If one were to administer Gao's composition using a needle, then the formulation would necessarily come from a vial of some sort. As for the multi-dose or single dose vial, it would have been obvious and well within the ability of the ordinary artisan to package the contents of the vials according to the desired use. Gao teaches that the dose may be repeated as desired (see page 19, fourth paragraph). Therefore, the claimed embodiments would have been obvious at the time the invention was made.

7. Claims 3-8, 13-18 and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gao *et al.* (WO 01/40455 A2, "Gao") as applied to claims 1, 2, 9, 11 and 21 above, and further in view of Evans et al. (WO 01/66137 A1, "Evans"). The claims are summarized above. Gao fails to teach the additional components in the claimed formulation: inhibitor of free radical oxidation, a buffer, a cryoprotectant, a salt, a divalent cation and a non-ionic detergent. However, these components are standard additives for vaccine stability. Evans discloses viral formulations for vaccine applications, including liquid adenovirus formulations, that comprise a buffer, a sugar, a salt, a divalent cation, a non-ionic detergent, a cryoprotectant, and a free-radical scavenger and/or a chelating agent to inhibit free radical oxidation (see abstract and page 9, second full paragraph). The inhibitor of free radical oxidation is ethanol, EDTA, histidine or combinations thereof, among others (see page 9, last paragraph). It would have been obvious to include the components taught by Evans in the formulation of Gao. One would have been motivated to improve the stability of Gao's live, recombinant adenovirus particles using Evans' additives because Evans teaches that improved stability of liquid adenovirus formulations was observed with the use of said components (see abstract). Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

8. No claim is allowed.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stacy B. Chen whose telephone number is 571-272-0896. The examiner can normally be reached on M-F (7:00-4:30). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell can be reached on 571-272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Stacy B Chen/
Primary Examiner, Art Unit 1648